

THAT WHICH IS CLAIMED IS:

1. A process for preparing a poly(arylene sulfide) polymer

which comprises:

(a) pre-reacting an aqueous alkali metal hydroxide with a polar organic compound at a first temperature to form a solution comprising an alkali metal aminoalkanoate;

(b) contacting the solution of step (a) with an alkali metal bisulfide and subjecting the thus formed mixture to a second temperature that is higher than said first temperature and that is sufficient to remove at least a portion of the water from such mixture; and

(c) then contacting the mixture with additional polymerization reactants comprising at least one dihaloaromatic compound under polymerization conditions.

2. A process according to claim 1 wherein said additional polymerization reactants also comprise a molecular weight modifying agent selected from the group consisting of alkali metal carboxylates, lithium halides, and water.

3. A process according to claim 2 wherein said molecular weight modifying agent is an alkali metal carboxylate.

4. A process according to claim 3 wherein said alkali metal carboxylate is sodium acetate.

5. A process according to claim 1 wherein the molar ratio of the amount of said dihaloaromatic compound to said sulfur source is in the range of about 0.8/1 to about 2/1.

6. A process according to claim 1 wherein the molar ratio of the amount of said polar organic compound to said sulfur source is in the range of about 1/1 to about 10/1.

7. A process according to claim 1 wherein said alkali metal hydroxide is sodium hydroxide.

8. A process according to claim 1 wherein said polar organic compound is N-methyl-2-pyrrolidone.

9. A process according to claim 1 wherein said alkali metal bisulfide is sodium bisulfide.

10. A process according to claim 1 wherein the molar ratio of said polar organic compound to the amount of said alkali metal bisulfide is in the range of about 1/1 to about 10/1.

11. A process according to claim 1 wherein said first temperature is in the range of about 50 to about 200°C.

12. A process according to claim 11 wherein the temperature is in the range of 75 to 125°C.

13. A process according to claim 1 wherein said second temperature is in the range of about 100 to about 240°C.

14. A process according to claim 1 wherein step (b) is conducted at a pressure in the range of atmospheric pressure to about 30 psig.

15. A poly(arylene sulfide) polymer prepared according to the process of claim 1.

16. A process for preparing a poly(arylene sulfide) polymer which comprises:

(a) pre-reacting an aqueous alkali metal hydroxide with a polar organic compound at a first temperature to form a solution comprising an alkali metal aminoalkanoate;

5 (b) subjecting the aqueous solution to conditions of time and a second temperature which is higher than said first temperature and that is sufficient to remove substantially the water in such solution;

10 (c) contacting the solution from step (b) from which water has been substantially removed with an aqueous alkali metal bisulfide and subjecting the thus formed mixture to conditions of time and temperature sufficient to remove substantially the water in such solution; and

15 (d) then contacting the mixture with additional polymerization reactants comprising at least one dihaloaromatic compound under polymerization conditions.

17. A process according to claim 16 wherein said additional polymerization reactants also comprise a molecular weight modifying agent

selected from the group consisting of alkali metal carboxylates, lithium halides, and water.

18. A process according to claim 17 wherein said molecular weight modifying agent is an alkali metal carboxylate.

19. A process according to claim 18 wherein said alkali metal carboxylate is sodium acetate.

20. A process according to claim 16 wherein the molar ratio of the amount of said dihaloaromatic compound to said sulfur source is in the range of about 0.8/1 to about 2/1.

21. A process according to claim 16 wherein the molar ratio of the amount of said polar organic compound to said sulfur source is in the range of about 1/1 to about 10/1.

22. A process according to claim 16 wherein said alkali metal hydroxide is sodium hydroxide.

23. A process according to claim 16 wherein said polar organic compound is N-methyl-2-pyrrolidone.

24. A process according to claim 16 wherein said alkali metal bisulfide is sodium bisulfide.

25. A process according to claim 16 wherein the molar ratio of said polar organic compounds to the amount of said alkali metal bisulfide is in the range of about 1/1 to about 10/1.

26. A process according to claim 16 wherein said first temperature is in the range of about 50 to about 240°C.
27. A process according to claim 27 wherein the temperature is in the range of 75 to 125°C.
28. A process according to claim 16 wherein said second temperature is in the range of about 100 to about 240°C.
29. A process according to claim 16 wherein steps (b) and (c) are conducted at a pressure independently selected from the range of atmospheric pressure to about 30 psig.
30. A poly(arylene sulfide) polymer produced according to the process of claim 16.